

Exhibit I

VIEWPOINT

Regulating Assault Weapons and Large-Capacity Magazines for Ammunition

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Mass public shootings in the US account for a small fraction of all firearm-related homicides, but have an outsized role in stoking the public's concern with firearm violence. The vivid instances of attacks on people in churches, schools, and offices and at other public gathering places do vastly disproportionate damage to peace of mind by creating a sense of peril in places that should feel safe. These attacks have been increasing in frequency and deadliness in recent years. As reducing this particular type of firearm violence becomes more urgent, the case for a variety of prevention measures becomes even stronger.

This Viewpoint focuses on a measure that is highly specific to the gun violence problem—stringent regulation of assault weapons and large-capacity magazines (LCMs) for ammunition. Federal law banned the introduction of new LCMs and military-style semiautomatic firearms between 1994 and 2004, but that regulation ended in 2004 and Congress did not renew it. Now, years later, the nation is experiencing the dire effects of opening the door to the manufacture and import of these weapons; it is time to close that door.

History and Current Status of Bans

The history of federal bans on weapons of mass destruction goes back to the 1934 National Firearms Act. Among other provisions, the Act required submachine guns and other firearms capable of fully

The 1994 Federal Assault Weapons Ban extended the regulation of military-style weapons to include some semi-automatic firearms. These weapons fire 1 round of ammunition for each pull of the trigger, and are capable of firing at a rate of roughly 1 per second. The 1994 Assault Weapons Ban ended the legal manufacture and import of specified firearms, as well as ammunition-feeding devices (magazines) that held more than 10 rounds of ammunition. At the time, most prohibited assault weapons were equipped with detachable magazines that held 30 rounds and could accept magazines that could hold as many as 50 or 100 rounds, thus making it possible to fire dozens of rounds without pausing to reload.²

The 1994 federal ban on new assault weapons had gaping loopholes. First, the federal ban did not restrict possession or transactions of existing assault weapons and LCMs. Second, manufacturers found ways to slightly modify the design of some of the banned weapons so that they met the letter of the law while preserving the military appearance and the possibility of accepting LCMs and firing high-powered ammunition quickly. Still, there is evidence that the ban had some salutary effect on mass public shootings.

The LCM ban, also in effect during 1994 to 2004, was not subject to the redesign problem because it provided a bright line that was difficult for manufacturers to overcome. There were, however, an estimated 25 million LCMs in circulation when the ban was enacted, and those remained in circulation, but with no new additions.² It was not just assault weapons (as defined) that were designed to use LCMs, but a variety of other semiautomatic firearms as well, so the LCM ban had much broader scope.

When the law expired in 2004, manufacturing and importations of LCMs and previously banned weapons resumed, and a surge of sales followed. Current estimates suggest that approxi-

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automatic fire (ie, firing several shots with a single pull of the trigger) to be registered with the federal government.¹ All transactions involving such weapons were taxed at \$200, a high confiscatory amount at the time. The registration and tax requirement remained in place, although inflation has substantially undercut the force of the transfer fee. The Act was expanded by Congress in 1986 to end the sale of new fully automatic weapons. There is every reason to believe that these restrictions have been effective. Even though the Thompson submachine gun was a notorious gangster weapon in the 1920s, fully automatic weapons of any kind are rarely used in crime in modern times or in mass public shootings.¹

mately 20 million assault weapons are owned by private individuals in the US, with millions of new assault weapons manufactured and imported each year.³ The industry initially advertised these weapons as "assault rifles," and continues to promote them with military allusions but has now rebranded this type of weapon as the "modern sporting rifle."

Seven states have some version of a ban or stringent restrictions on assault weapons: California, Connecticut, Hawaii, Maryland, Massachusetts, New Jersey, and New York, as well as the District of Columbia.⁴ These laws are being challenged in the courts as a violation of the Second Amendment, but have survived these challenges to date.

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Evidence of Potential Effectiveness of a National Ban

A review conducted by the RAND Corporation concluded that the handful of published studies on the effect of the ban on mass public shootings was “inconclusive” due in part to flaws in the analysis used by the 3 studies with positive findings.⁴ But it is unlikely the surge in mass public shootings that involved assault weapons and LCMs that occurred after the ban would have happened if the ban had remained in place. The logic is straightforward. The sales of these weapons, which had declined during the ban, expanded greatly following its repeal, making them more widely available to everyone including would-be mass murderers.

To document recent trends in such mass public shootings requires a precise definition. One common definition for mass public shootings has several elements,^{5,6} including: (1) a minimum of 4 homicides; (2) a public location; and (3) circumstance not attributable to robbery, other felonious activity, or commonplace conflict in families or among acquaintances. A comprehensive compilation of such events is the Violence Project’s database of mass shootings in the US,⁷ which includes the number of people killed and injured in each event and the type of weapon or weapons used.

Information from this database indicates that in the years following when the law expired in 2004, the number of mass shooting incidents greatly increased and the number of fatalities increased even more. During the period from 2015 to 2019, the number of incidents reached 33 (or 6.6 per year), which was almost twice the number during the decade the Federal Assault Weapons Ban was in effect (eFigure and eTable in the [Supplement](#)). The number of fatalities from shootings that involved banned weapons decreased during the second half of the ban (2000-2004) and then surged during subsequent periods, reaching a total of 271 during 2015 to 2019. It was during that 5-year interval from 2015 to 2019 that 5 of the top-10 deadliest mass public shootings in US history occurred, and all were committed with assault weapons.⁸ The number of fatalities resulting from mass public shootings with other weapons has remained relatively flat.

The Australian Ban on Rapid-Fire Weapons

The Australian experience has factored into the debate over reinstating the assault weapons ban in the US. In Australia, the impetus for banning semiautomatic weapons was a 1996 mass public shoot-

ing in Port Arthur, Tasmania, in which a young man killed 35 people with a semiautomatic rifle. Swift action by the federal and state legislatures produced legislation that banned not only manufacture and import, but private possession of semiautomatic rifles. To ease the transition, a series of firearm buybacks were instituted, and 1 million weapons were ultimately relinquished, estimated to be one-third of all privately owned guns. Australia had 11 mass shootings during the decade prior to the ban,⁹ and 1 since then (a family killing in 2018 that would not count as a mass public shooting by the US definition).

The Australian experience is illustrative as a proof of concept for other countries, including the US. Of note, the ban covered all semiautomatic rifles, not just those with the specific features suggestive of use in warfare as opposed to hunting. The ban on possession of existing guns rather than only on the introduction of new guns greatly accelerated its apparent effectiveness.

Potential Next Steps

On July 29, 2022, the US House of Representatives passed the Assault Weapons Ban of 2022. To a large extent this bill reinstated the 1994 ban, including the ban on the sale of new semiautomatic firearms deemed to be assault weapons, and of new LCMs holding more than 10 rounds. An important innovation is that for LCMs, the bill only allows continued possession and use of existing devices, but not transfer. However, given the reality that the US Senate will not enact this bill, it is useful to consider other approaches.

States could institute or expand assault weapon bans. Indeed, just a ban on LCMs would be a promising first step, impeding access to these products by individuals who could otherwise use them to fire multiple rounds of ammunition at large numbers of people before law enforcement can be mobilized to stop the killing.

Conclusions

In 2017, the *New York Times* polled “32 current or retired academics in criminology, public health and law, who have published extensively in peer-reviewed academic journals on gun policy”¹⁰ to ask them what measures would be most effective in dealing with the mass shooting problem in the US, and an assault weapons ban was deemed overall by this panel to be the single most effective measure. The evidence in support of a ban has grown tragically stronger since then.¹⁰

ARTICLE INFORMATION

Conflict of Interest Disclosures: Dr Donohue reported serving as an expert witness for various government entities on matters related to assault weapons bans based on his research in this area.

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